

IN THE CLAIMS:

Claims 2-10, and 12-29 have been amended herein. All of the pending claims 1 through 29 are presented below. This listing of claims will replace all prior versions and listings in the application. Please enter these claims as amended.

1. (Original) A system for selectively depositing a material on a previously formed workpiece, comprising:

a platform for supporting the workpiece during a deposition process;

a sensing system for measuring an upper surface of the workpiece and a surface level of a

material deposited on the upper surface of the workpiece until the surface level of the material corresponds to a specific thickness of the material; and

a deposition system for depositing the material on the workpiece to the specific thickness as monitored by the sensing system.

2. (Currently Amended) The system of claim-1, wherein the deposition system is a spin-coating deposition system.

3. (Currently Amended) The system of claim-2, wherein the sensing system includes a sensor for both measuring the upper surface of the workpiece and for monitoring the surface level of the material deposited on the upper surface of the workpiece.

4. (Currently Amended) The system of claim-2, wherein the sensing system includes a first sensor for measuring the upper surface of the workpiece and a second sensor for monitoring the surface level of the material deposited on the upper surface of the workpiece.

5. (Currently Amended) The system of claim-1, wherein the deposition system is a stereolithographic deposition system.

6. (Currently Amended) The system of claim-5 5, wherein the sensing system includes a sensor for both measuring the upper surface of the workpiece and for monitoring the surface level of the material deposited on the upper surface of the workpiece.

7. (Currently Amended) The system of claim-5 5, wherein the sensing system includes a first sensor for measuring the upper surface of the workpiece and a second sensor for monitoring the surface level of the material deposited on the upper surface of the workpiece.

8. (Currently Amended) The system of claim-4 1, wherein the workpiece is a semiconductor wafer.

9. (Currently Amended) A selective deposition system for depositing a material at selective locations on a previously formed workpiece, comprising:

a controller;

a platform for ~~moveably~~ movably supporting in a Z direction the workpiece during a layer by layer deposition of the material at the selective locations on the workpiece;

a reservoir for retaining the material and submerging the platform and the workpiece during the layer by layer deposition;

an X/Y scanning laser responsive to the controller for exposing a portion of the material corresponding to the selective locations for a current deposition layer about the workpiece; and

at least one sensing system responsive to the controller for determining a workpiece surface level when the workpiece is supported by the platform and for determining a surface level of the material formed on the workpiece.

10. (Currently Amended) The system of claim-9 9, wherein the at least one sensing system is further configured for determining a material level within the reservoir, the material level corresponding to the surface level of the material formed on the workpiece.

11. (Original) The system of claim 10, wherein the controller is further configured to orient the workpiece near the material level for initializing the layer by layer deposition of the workpiece.

12. (Currently Amended) The system of claim-9 9, wherein the controller is further configured to continuously control the platform and the laser while monitoring the-second at least one sensing system until the material on the workpiece corresponds to a specific thickness of the material.

13. (Currently Amended) The system of claim-9 9, wherein the at least one sensing system comprises a first sensing system and a second sensing system with each including at least one transmitter and at least one receiver.

14. (Currently Amended) The system of claim-9 9, wherein the workpiece is a semiconductor wafer including at least one semiconductor die.

15. (Currently Amended) The system of claim-14 14, wherein the material formed on the semiconductor wafer is formed on at least an active surface thereof.

16. (Currently Amended) A method for selectively depositing a material on a workpiece, comprising:
securing a workpiece to a platform;
measuring a level of a top surface of the workpiece to determine a starting point for depositing an unconsolidated material thereon;
depositing the unconsolidated material on the workpiece;
measuring a level of an upper surface of the unconsolidated material-as deposited deposited on the workpiece to determine a thickness of the material on the workpiece from the respective levels of the top surface of the workpiece and the level of the upper surface of

the material;
consolidating at least a portion of the unconsolidated material according to a defined pattern on
the workpiece when the thickness of the material on the workpiece does not exceed a
preselected thickness; and
repeating the depositing, measuring and consolidating of the upper surface of the material until
the thickness of the material corresponds to the preselected thickness.

17. (Currently Amended) The method of claim-16 16, wherein the depositing
comprises spin-coating the workpiece with at least a portion of the material.

18. (Currently Amended) The method of claim-16 16, wherein the depositing
comprises coating the workpiece with the unconsolidated material material, and the consolidating
comprises exposing selected portions of the unconsolidated material over the workpiece to form
the material on the workpiece.

19. (Currently Amended) The method of claim-18 18, wherein the coating comprises
submerging the platform and the workpiece attached thereto into a volume of the unconsolidated
material.

20. (Currently Amended) The method of claim-18 18, wherein the coating comprises
applying the unconsolidated material to the workpiece with a recoater blade across-an the upper
surface of the material on the workpiece.

21. (Currently Amended) The method of claim-16 16, wherein the measuring-a the
level of-a the top surface of the workpiece, comprises:
transmitting a signal from a transmitter toward the top surface of the workpiece;
receiving the signal at a receiver as reflected by the top surface of the workpiece; and

calculating the level of the top surface upon which the at least a portion of the material is deposited.

22. (Currently Amended) The method of claim ~~16~~ 16, wherein the measuring ~~an~~ the level of the upper surface of the material as deposited on the workpiece, comprises: transmitting a signal from a transmitter toward the upper surface of the material; receiving the signal at a receiver as reflected by the upper surface of the material; and calculating the thickness of the material ~~as deposited~~ deposited on the workpiece to determine the thickness of the material on the workpiece.

23. (Currently Amended) A method for fabricating a semiconductor assembly, comprising:

measuring a level of a top surface to determine a deposition starting point of at least one semiconductor die integral with a semiconductor wafer;
depositing a layer of an encapsulant material in an unconsolidated form beginning at the deposition starting point on the at least one semiconductor die;
measuring an upper surface of the layer of the encapsulant ~~material as~~ material deposited on the at least one semiconductor die to ~~determine~~ determine a thickness of the material on the at least one semiconductor die;
consolidating at least a portion of the encapsulant material in the unconsolidated form according to a defined pattern on the at least one semiconductor die when the thickness of the material on the at least one semiconductor die does not exceed a preselected thickness;
and
repeating the depositing, measuring and consolidating of another layer of the encapsulant material over a previous layer until the thickness of the encapsulant material is substantially equal to the predetermined thickness.

24. (Currently Amended) The method of claim-23 23, wherein the depositing comprises spin-coating the semiconductor wafer with at least a portion of the encapsulant material in an unconsolidated form.

25. (Currently Amended) The method of claim-23 23, wherein the depositing comprises:
coating the semiconductor wafer with the encapsulant material in an unconsolidated form; and
exposing selected portions of the encapsulant material over the semiconductor wafer to form the layer of the encapsulant material on the at least one semiconductor die.

26. (Currently Amended) The method of claim-25 25, wherein the coating comprises submerging the semiconductor wafer into a volume of the encapsulant material in an unconsolidated form.

27. (Currently Amended) The method of claim-25 25, wherein the coating comprises applying the uncured portion of the encapsulant material to the semiconductor wafer with a recoater blade across-a the upper surface of the layer of the encapsulant material on the semiconductor wafer.

28. (Currently Amended) The method of claim-23 23, wherein the measuring-a the level of-a the top surface of the at least one semiconductor die, comprises:
transmitting a signal from a transmitter toward the top surface of the at least one semiconductor die;
receiving the signal at a receiver as reflected by the top surface of the at least one semiconductor die; and
calculating the level of the top surface upon which the at least a portion of the encapsulant material is deposited.

29. (Currently Amended) The method of claim ~~23~~ 23, wherein the measuring ~~an~~ the upper surface of the encapsulant material ~~as deposited~~ deposited on the at least one semiconductor die, comprises:

transmitting a signal from a transmitter toward the upper surface of the encapsulant material; receiving the signal at a receiver as reflected by the upper surface of the encapsulant material;

and

calculating the thickness of the encapsulant material as deposited on the at least one semiconductor die to determine the thickness of the material on the at least one semiconductor die.